

CLAIMS

1. A glass substrate having a primer layer that is formed thereon and comprises a hydrolysis product of a hydrolysable silicon compound having an alkylene group and a hydrolysis product of a hydrolysable zirconium compound or hydrolysable titanium compound, the glass substrate being characterized in that, in the primer layer, zirconium is in an amount by weight ratio of 0.0002 times to 0.0025 times that of silicon, or titanium is in an amount by weight ratio of 0.0005 times to 0.0045 times that of silicon.

2. A glass substrate according to claim 1, which is characterized in that the primer layer has a thickness of from about 1nm to about 10nm.

3. An anti-fogging article comprising a resin film that exhibits water-absorptive property and/or hydrophilic property and is formed on the primer layer of the glass substrate according to claim 1.

4. An anti-fogging article according to claim 3, which is characterized in that a resin of the resin film is selected from the group consisting of urethane resins, acrylic resins, epoxy resins, olefinic resins, nylon resins, polyethylene terephthalate, polyethylene, vinyl chloride resins, polyvinyl alcohol, and polycarbonate.

5. An anti-fogging article according to claim 4, which is characterized in that the resin of the resin film is a urethane resin.

6. An anti-fogging article according to claim 4, which is characterized in that the resin of the resin film is a urethane resin obtained from a raw material comprising a surfactant having an isocyanate reactive group.

7. An anti-fogging article according to claim 4, which is characterized in that the anti-fogging article has at least water-absorptive property.

8. A washing method, which is characterized in that an alkali solution is used in a method for washing the anti-fogging article according to claim 3.

9. A coating liquid for obtaining the primer layer according to claim 1, the coating liquid being characterized in that it comprises a hydrolysable silicon compound and/or hydrolysate having an alkylene group, and a hydrolysable zirconium compound and/or hydrolysate or a hydrolysable titanium compound and/or hydrolysate and that it has a pH value of 2 or lower.

10. A coating liquid according to claim 9, which is characterized in that the hydrolysable silicon compound having an alkylene group is selected from the group consisting of monomethylsilanol, dimethylsilanol, trimethylsilanol, silanol(tetrahydroxysilane), monoethylsilanol, diethylsilanol, triethylsilanol, monopropylsilanol, dipropylsilanol, tripropylsilanol, triisopropylsilanol, diphenylsilane diol, 3-glycidoxypropyltrimethoxysilane, 2-(3,4-epoxycyclohexyl)ethyltrimethoxysilane, aminopropyltriethoxysilane, and N-phenyl-3-aminopropyltrimethoxysilane.

11. A coating liquid according to claim 10, which is characterized in that the hydrolysable silicon compound is aminopropyltriethoxysilane.

12. A coating liquid according to claim 9, which is characterized in that the hydrolysable zirconium compound is selected from the group consisting of zirconium oxychloride, zirconium nitrate, zirconium acetate, and alkoxide compounds.

13. A coating liquid according to claim 12, which is characterized in that the hydrolysable zirconium compound is zirconium oxychloride.

14. A coating liquid according to claim 9, which is characterized in that the hydrolysable titanium compound is selected from the group consisting of titanium oxychloride, titanium nitrate, titanium acetate, and alkoxide compounds.

15. A coating liquid according to claim 14, which is characterized in that the hydrolysable titanium compound is titanium oxychloride.

10 16. A coating liquid according to claim 9, which is characterized in that the coating liquid according to claim 8 further comprises a solvent, and that the total amount of the silicon compound and the zirconium compound or titanium compound is 1.0wt% to 1.4wt% relative to the solvent.